Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.





Snow Surveys and Water Supply Forecasts

Montana and Northern Wyoming
Upper Missouri,
Upper Columbia and
Yellowstone Rivers

SOIL CONSERVATION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AND MONTANA AGRICULTURAL EXPERIMENT STATION

Park Service, U.S. Forest Service, U.S. Geological Survey, Park Service, U.S. Bureau of Reclamation, State Engineers and Wyoming and other Federal, State and local Organizations.

__ AS OF ____

MARCH 1, 1955

UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY AND WATER SUPPLY FORECAST REPORTS:

Forecasts by U. S. Weather Bureau of total annual streamflow October-September, inclusive, at more than 300 gaging stations are issued monthly January through May in the publication WATER SUPPLY FORECASTS FOR THE WESTERN UNITED STATES.

Weather Bureau forecasts of runoff presented in that bulletin are computed from procedures based on mathematical analysis of the relation between precipitation and runoff.

The Weather Bureau bulletins may be secured by writing to:

Hydrologist in Charge River Forecast Center U. S. Weather Burcau 712 Federal Office Building Kansas City 6, Missouri

For current information on local river and flood conditions, reference should be made to the appropriate River District Office, listed below:

Meteorologist in Charge........Missouri River and
Weather Bureau Office tributaries above
Box 1705 Fort Peck Dam; Milk
Helena, Mont. River

Meteorologist in Charge......Yellowstone River
Weather Bureau Airport Station and tributaries.
Box 1338
Billings, Mont.

Meteorologist in Charge..............Columbia River and Weather Bureau Airport Station tributaries above R.F.D. #1 and including Grand Spokane, Washington Coulee Dam.

State of Montana

FEDERAL - STATE COOPERATIVE

SNOW SURVEYS and WATER SUPPLY FORECASTS

for

MONTANA AND NORTHERN WYOMING

(Upper Missouri and Upper Columbia River Basins)

Report Prepared by:

A. R. Codd Hydraulic Engineer Soil Conservation Service

and
0. W. Monson
Irrigation Engineer
Montana Agricultural
Experiment Station

Soil Conservation Service
U. S. Department of Agriculture
and
Montana Agricultural Experiment Station
Bozeman, Montana

Report issued by:

Truman C. Anderson State Conservationist of Montana

M. M. Kelso, Director Montana Agricultural Experiment Station



WATER SUPPLY OUTLOOK FOR 1955 SEASON MARCH 1, 1955

The water supply outlook on March first is only "fair" * for the 1955 season. Snow storms that covered the State of * Montana during the latter part of February brought consider-* able moisture. These storms raised the seasonal percentage * from 62 per cent to 72 per cent average over the Missouri -36-* Basin. Over the Columbia Basin the increase was from 57 per ***** * cent to 78 per cent average. A small runoff season is antic→ * ipated for the 1955 season. The outlook is not as bad as on * February first but it is still not good. Stream-flow in mountain streams has generally been close * * to the usual amounts, while the prairie streams have been 4 * considerably less than the average condition. -;;-Reservoir storage in the northern portion of the State 4% * is above average, while in the southern part of the State ** * stored water is exceptionally low. * Although precipitation during February was considerably * above average, the accumulated amount of precipitation from * September through February is only 65 to 70 per cent the * * usual amount.

JEFFERSON RIVER:

The snow-pack over the Beaverhead-Jefferson River Basin is exceptionally light this season. Snow surveys made during late February show 60 per cent average over the entire basin. The Big Hole and Wise River showed the larger percentages and the tributary basins to the south had the lighter snow-pack. Preliminary estimates of seasonal stream-flow indicate slightly better than half the usual April-September flow.

MADISON RIVER:

Snow surveys made about March first on the headwaters of the Madison indicate a fair water supply this season. This year's snow-pack is only 72 per cent of last year, 84 per cent of 1953 and 77 per cent of the average snow water content. Conditional estimates of seasonal flow indicate about 80 per cent of the usual flow.

GALLATIN RIVER:

The Gallatin River has an increase of snow-pack over the February reading and a fair water supply of 86 per cent average flow is anticipated. Due to the late accumulation of snow in February an early runoff is expected.

YELLOWSTONE RIVER:

Snow surveys made in Yellowstone Park and tributary basins for March first indicate the present snow-pack is only 65 per cent of last year's on the same date and 76 per cent of the average condition.



MISSOURI MAIN STEM:

The 1955 snow-pack over this Basin from Toston to Fort Benton is relatively light this season. The Big Belt mountains show a higher water content in per cent of average than the ranges to the west. This section of the Missouri has a 65 per cent average snow-pack and conditional stream-flow estimates are 63 per cent at Toston and 68 per cent average flow at Ft. Benton.

SUN RIVER:

March first snow surveys made on the Sun River Basin indicate considerably less potential storage water than last season. A preliminary forecast for April through September is 293,000 acre feet at Vaughn and an April-July flow of 250,000 acre feet or 58 per cent of the 1943-53 average. Late season accumulation of snow will probably mean an early season runoff. The Teton and Marias Rivers both have a short snow-pack this season. Stream-flow will probably be about 65 per cent average for these streams this season if normal accumulations occur during March and April.

COLUMBIA BASIN

FLATHEAD RIVER:

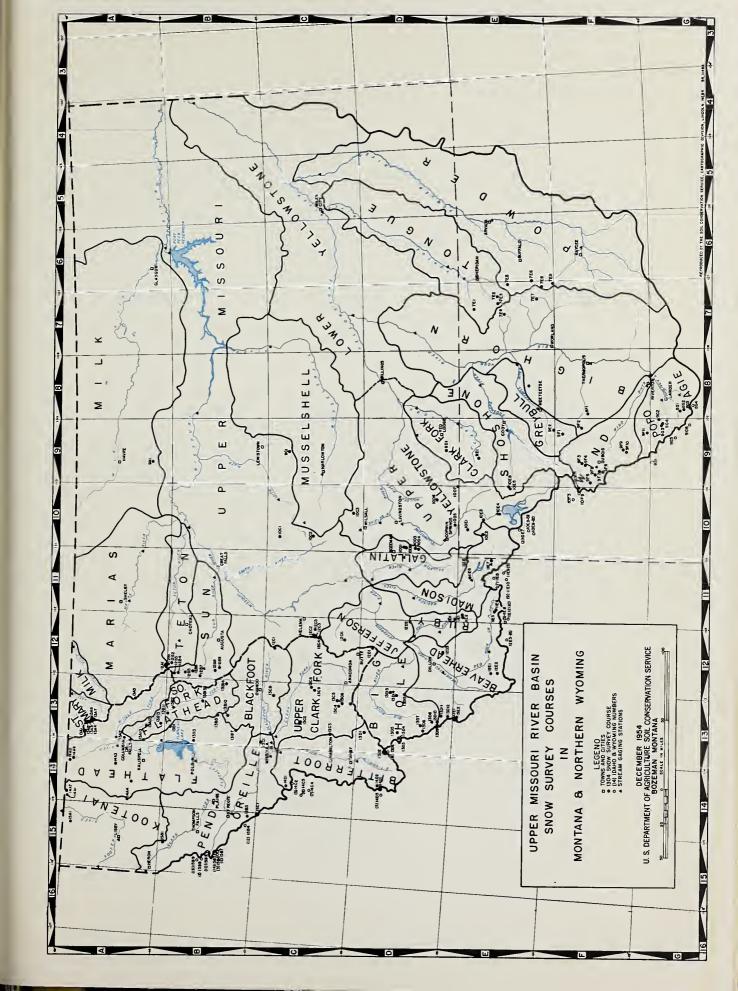
Late February storms brought considerable snow water content. However, not enough to overcome the difference reported on February first. The snow blanket is now 61 per cent of last year and 70 per cent of average. Anticipated April-September flow for the three tributaries range from 70 to 88 per cent average. The conditional forecast of flow into Hungry Horse Reservoir for April-September is 1,590,000 acre feet or 70 per cent average. It is anticipated that 1,510,000 acre feet will flow during April-July with 1,345,000 acre feet occurring during April-June.

The snow-pack over the Mission Range appears to be between 80 and 83 per cent average and seasonal flow should approximate these figures about 20 per cent short of the usual flow.

CLARK FORK RIVER:

The 1955 snow-pack over the snow fields feeding into the Clark Fork River is about two-thirds the usual amount. The Bitterroot watershed is very short with only 43 per cent of the average pack. The Blackfoot Basin has a 65 per cent average snow-pack this season. Anticipated stream-flow amounts are shown on the forecast pages of this report.





INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

			Loca	ation							Ton	ation				
	Hontana Eusber	Elev.	Sec.	Top.	lange	Record Began	Heasuring Dates	By: b	Brainage Basin and Course Home	Homtens Fumber	Sec.	200	Range Long,	Record	He sering Dates	Bys b
JEFFERSON RIVER (ROCK-BEAVERHEAD)		ssoui	RI R	IVER	DRAI	NAGE,			(POPO AGIE RIVER)	SOURI Wycalas	RIVER	DRA	INAGE	CO	NT.	
Lakeview Canyon Limekiln	11R) 11m 12R2 12K1	71:00 6930 6950 8850	27 26 5 18	148 148 158 148	2H 2H 9H 9H	1958 1958 1958 1958	3,4,5, 3,4,5 3,4 3,4	9 9 1 1	Slue Ridge Orannier Keadows Larseu Creek Saumill Glade South Pass	802 864 966 801 863	9500 23 9000 19 9000 12 8500 3 9000 13	319 309 309 319 309	107A 107A 107A 107A 107A	1939 1936 1948 1939 1939	2,3,4,5 2,3,4,5 3,4,5 2,3,4,5 2,3,4,5	12 12 12 12
Gold Stone	13010 1309 1381 13012 1382 13011	7600 81.00 71/80 6650 7090 6800	12 11 9 14 15 27	68 108 98 108 68	164 164 154 154 154 154	1948 1948 1948 1948 1948 1948	3,4 3,4 3,4 3,4 3,4 3,4	1 1 1 1 1 1	(SIG HORN RIVER) Beavers Mill Cel Creek Teneleep R.S. Timber Creek Ranger Creek Wood River	972 871 767 962 784 971	8900 6 8700 36 8300 30 8800 25 8800 32 8000 28	1.3 m 1.3 m 1.6 m 1.7 m 5.3 m 1.6 m	102W 101W 86W 103W 88W 103W	1948 1948 1935 1948 1935 1939	2,3,4,5 2,3,4,5 4,5 4,5 4,5 4,5 2,3,4,5	12 12 1 12 1 12
Rig Hole Pass-Below East Boundary Oibbons Pass Jehnku Crock	1303 1304 1305 1302 1308 1306	71:00 6900 6700 71:00 731:0 7300	26 2h 22 h 25 24	35 35 35 28 78 65	18W 18W 17W 19W 16W 17W	1948 1948 1948 1934 1948	3,4 3,4 3,4 1,2,3,4,5 3,4 3,4	1 1 1,2 1	East Entrance Sylvan Pass	Myoning 1085 1085 youing	7000 17 7100 12	528 528	109W 110W	19 4 8 1936	1,2,3,h,5 1,2,3,h,5	\$ \$
Miner Lake (WISE RIVER) Anderson MW. 1 Elk Horn 1	1307 1301k 1301\$	7000 8450	18 15	66 38 143	16W 12W 12W	1945 1948 1934 1948	3,4,5 3,4 3,4,5	1 2	Big Occse Surgess Ranger Sta. Dome Lake Lodgepole	782 781 783 981	7700 4 7900 36 8600 11 8200 32	5311 5611 5311 5611	86# 89# 87# 106#	1965 1950 1950 1960	2,3,4,5 2,3,4,5 2,3,4,5 4,5	1 12 19 1
(RUNY RIVER) Cottonwood (Upper) 1	1301)	5900 8400 6950	2h 30 22	28 208 208 88	124 34 24 78	19h8 19h8	3,4 3,4 3,4,5	1 1 1	Horth Poster Hoddy Pass Soldier Park Sour Dough	789 788 785 786	8500 5 9700 11 8700 36 8500 17	1.70 1.670 51.0 1.90	894 894 894 814	1951 1950 1950 1936	2,3,4,5 2,3,4,5 2,3,4,5 2,3,4,5	12 1 12 1
Tobacco Root 1	1202 1101	6900 6125	26	148 98	34	1945 1948 1948	3,4,° 3,4	1		koi in	ADIA DI	VER	DACIN			
Hebgen I West Yellowstone I Horris Basin I	11E5 11E7 10E2	6550 6700 7500	ργ₀-Ρ: 3₽ 55	118 138 2' :	7700-1951 28 38	1934 1934 1935	1,2,3,4,5 1,2,3,4,5 3,4	2 2 5,6	ROOTERAL RIVER	COLUI	6000 1	VER	BASIN	1937	∳.5.5 }	į.
Hood Headow Hystic Lake Hew World	100k 1003 1002 1001	81.00 6600 6600 6700	1h 22 30 2h	58 48 38 38 38	68 78 68 58	1935 1934 1935 1939	2,3,4,5 2,3,4,5 2,3,4 1,2,3,4,5	2,6 2,6 6,7 6,7	Blue Bird Basin Red Mountain Weasel Divide FLATHRAR RIVER	1641 1541 1647	6800 2k 6000 k 5k50 8	3711 3611 3711	364 294 264	1937 1937 1955	4.5.51 1.5.51 1.5.51 1.5.51	1 1 1
MISSOURI RIVER MAIN S	1176 1721 1205	7150 6200	2	831	5W	1934	1,2,3,4,5 1,2,3,4,5	2	Basin Creek Big Creek Brush Creek Cattle Queen Desert Hountain	1381h 1383 1444 1341 1342	5000 11 6750 647 5000 13 4700 7 5600 24	199 228 308 358 318	184 184 194 194	1951 1961 1937 1939	2,3,4,5 3,4,5 3,4,5 3,4,5 1,2,3,4,5	1 5
Crystal Labs Crasshopper Rings Hill Ploaio Grounds Pipestone Pass Stemple Pass In Mile Cr., Lower Ten Mile Cr., Middle l Teu Mile Cr., Upper l	901 1002 1001 1206 1201 1201 1202 1203	6100 7000 7950 6500 7200 6900 6250 6800 8000	19 19 35 10 11 16 13 13	125 91 131 51 11 131 81 61 81	108 CE TE CH TH CH CH CH CH CH CH CH CH CH CH CH CH CH	1941 1938 1937 1940 1938 1934 1935 1934	3.4 3.4,5 3.4,5 2.3,4,5 3.4,5 1,2,3,4,5 1,2,3,4,5 1,2,3,4,5	1,12 2 3 12 2 2 2	Hell Roaring Divide Holbrook Eishenshn #3 Logan Creek Marias Pass Spotted Bear Mt. Strenberry Lake Trinkus Lake Trout Lake #2	1ha3 13813 1ha2 1ha6 1ha5 1385 1382 1381 1381	5770 35 h530 18 h300 7 h000 1h h300 3h 5250 3h 7000 23 6500 11 6500 9 3600 21	32m 21,m 37m 37m 30m 30m 25m 26m 25m 25m 26m 25m	22H 13H 21H 22H 22H 21H 15H 15H 17H 17H	1977 1982 1991 1986 1994 1997 1998 1988 1988 1988 1988 1988 1988	3,4,5 1,2,3,4,5 4,5 3,4,5 1,2,3,4,5 3,4,5 3,4,5	1 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Waldron Creek	12A1 12B2 12B1	6000 5600 6000	13 16 6	26# 25# 25#	10W 9W 9W	1968 1968 1968	3,4 3,4 3,4	1,12 1,12 1,12	Opper Holland Lake Twin Creeks Quintonkon Coyote Hill El Dorado Hine Gold Creek Lake	1385 13811 13813 13810 1309 1308	7000 28 3580 11, 3800 11, 1200 12 7800 23 7200 11, 61,50 6	208 268 268 1.8u 8x 8x	166 166 176 166 126 126	1952 1966 1966	3,4,5 3,4,5 2,3,4,5 2,3,4,5 1,2,3,4,5 4	1 1 1 12 12
Cabin Creek 5-Bull 1 Oates Park 1 Goat Hountain 1 Wrong Ridge 1	1296 1296 1299 1295 1287 1283 128h	5500 5400 5600 5300 7000 6800 5700	9 33 36 31 20 17 32	208 238 208 248 258 258 258	104 104 104 104 104 104	1968 1969 1968 1969 1936 1969	3,h 3,h 3,h 3,h 3,h	1 1 1 2 1 1	Interguard Labrecht Forest # 6 Borth Fork Jodko Pionic Grounds Pipsstone Pass Slide Rook Hountain Southern Gross Stemple Pass Storm Lake No. 2 Stuart Nill	13Gk 1308 1387 1206 1201 1302 1305 1301 1307	\$100 31 6330 3 6500 10 7200 11 7100 26 6500 8 6900 16 7780 19	58 148 178 58 18 108 58 138 148 58 148	13W 15W 17W 6W 7W 16W 13W 13W 13W 13W	1939 1951 1961 1960 1936 1937 1939 1936 1939	2,3,4 1,2,3,4,5 3,4,5 2,3,4 2,3,4,5 4 2,3,4,5 2,3,4,5 2,3,4,5 2,3,4,5	1,12
(MARIAS RIVER) Marias Pass 1	1345	5250	y.	30H	1.lar	1936	1,2,3,4,5	2	Stuart Houstain #1 PEND ORETLE RIVER	1306	6500 19 7400 6	7 Pi	î.	1936	2,3,4	1,12
(HILK RIVER)	941	5200	15	26W	168	1961	3, 4	7	Baree Hountain Pressout Buscit #2 Hoodoo Greek	1381 15810 1501	6000 1 6800 21 6200 9616	25H 15H 14H	31W 27W 27W	1937 1951 1937	4,5,5 1 4,5 4,5	1 1
	1003	7000	19	911	ðs	1938	3, h	1,12	RITTERNOOT RIVER Bast Fork Ranger Sta. Cibbons Pass	. 1301 1302 1401	5500 16 7100 h	28 28	179 - 198	1937 1934	h 1,2,3,h,5	1,12
Canyon Cooks City Crevice Mt, Independence Lake Camp	5) 501 1083 1007 1005 1006 1084	7800 8500 8000 7850 h	25 25 25 25 40-34 25 40-34	96 96 78	16E 100-30' 1LR 9E 12B 100-24' 100-37'	1937 1938 1937 1935 1941 1937	u, 1,2,3,4,5 1,2,3,4,5 3,4 3,4 1,2,3,4,5 1,2,3,4,5	1,12 12 5 1 12 12 5	Nod Greek Parture Hes Parce Camp Hes Parce Pass Skalkaho Standt	1102 1101 1303	5580 15620 6575 32 7259 30	26 m 6 m	- 190 250 23W 16E 17W	1937 1937 1937 1937	3.4.5	1 1,12 1,12 1,12
(SHIELDS RIVER) Porcupine	1003	6500	10	Lu	108	1938	3 _p h	1	ST. MARY RIVER	ASKATO	CHEWAN	RIV	ER BA	SIN		
LOWER YELLOWS TOKE (WIND RIVER) Wyon									Iceberg Lake Piegen Pace di Piegen Pace do Nount Alleu d7	1343 1344 1346 1347	6000 148°-50 5000 148°-146 6500 148°-145 7000 148°-144		113°-42° 113°-42° 113°-42°	1922 1922 1922 1922	5 5 5 5	2,8 2,8 2,8 2,8 2,8
Burroughe Creek Dinwoodie Dry Creek Duffoir Geyeer Creek Hobbe Park Little Werm Maquito Park R.S. Shoridan R.S. St. Lemrence R.S. TCroes Reach Trut Creek	979 976 977	9200 8800 10000 9500 8750 8500 10000 9500 9500 7500 9000 8000 8100 9600	25 15 21 32 21 22 22 23 3 26 1 5 29	73 73 73 73 73 73 73 73 73 73 73 73 73 7	110W 107W 105W 6W 108W 108W 106W 7W 105W 105W 107W 2W 110W	1939 1948 1948 1948 1948 1949 1949 1949 194	2.3.4.5 2.3.4.5 2.3.4.5 2.3.4.5 2.3.4.5 2.3.4.5 2.3.4.5 2.3.4.5 2.3.4.5 2.3.4.5 2.3.4.5 2.3.4.5 2.3.4.5	12 12 12 12 12 12 12 12 12 12 12 12 12 1	n. Emerale 1,2,5,4 b. Pamerule refer to 1. U.S. Forest Ser 2. U.S. Coclegion 3. Montana Fowro O. i. U.S. Indian Ser 5. Mait onal Park \$6 6. Montana Experime	and 5 ref o Agency t vice Survey vice service	5800 k8~50	y 1, Fe the smo	7. Oity 6 8. Domini 9. U.S. 1 1. Doer 1 2. Sail 0 3. Montan	as follo of Besem lem Water Tich and Suresiu e Lodge Ci comserva an State	75.1	liny 1.

			-Flow in T	nousands	oi Acre F	
UPPER MISSOURI RIVER	FORECAST	%	FORE-	36	D 664	10-Yr.
IN MONTANA	RUNOFF	10-Yr.	CAST _		Runoff*	Avg.
		AVG.	PERIOD	1953	1952	1943-5
RED ROCK RIVER	۲6	63	Ann Cont	72	126	89
Monida (near) (1)	56 52	60	Apr-Sept	72	124	88
Warra 2 - Daniela (-4)	54	61	Apr-July	72	126	92
Kennedy Ranch (at)	54	OT	Apr-Sept	12	120	74
BEAVERHEAD RIVER	7.00	اب	A C	3.70	000	201
Barratts (at)	109	54 54	Apr-Sept	170	222	204
	83	54	Apr-July	130	169	154
BIG HOLE RIVER	ריז ה	(2		21 5	808	811
Melrose (near)	510	63	Apr-Sept	745		
	463	61	Apr-July	699	761	748
JEFFERSON RIVER	(50	-0		7.00/	3300	77/0
Sappington (at)	673	58	Apr-Sept	1006	1135	1160
	597	58	Apr-July	921	1025	1025
MADISON RIVER					01.0	07/
West Yellowstone(near)		77	Apr-Sept	207	248	216
	127	77	Apr-July	158	192	165
Grayling (near) (2)	349	76	Apr-Sept	434	563	457
	276	76	Apr-July	347	458	363
McAllister (near) (3)	622	79	Apr-Sept	718	961	782
	501	79	Apr-July	577	796	633
GALLATIN RIVER						
Gateway (near)	317	66	Apr-Sept	404	596	485
	273	66	Apr-July	345	524	413
Logan (at)	300	68	Apr-Sept	442	745	528
	257	66	Apr-July	379	665	452
MISSOURI RIVER						
Toston (at) (3)	1590	63	Apr-Sept	2139	2895	2517
, , ,	1345	62	Apr-July	1868	2554	2165
Fort Benton (at) (4)	2565	68	Apr-Sept	3726	3912	3767
. , , , , ,	2162	67	Apr-July	3259	3382	3205
Loma (at) (4)	2983		Apr-Sept	5035	4562	4551
	2546	65 65	Apr-July	4515	3996	3919
Zortman (near) (4)	3284	66	Apr-Sept	5886	5116	4939
, , , , , , , , , , , , , , , , , , , ,	2795	66	Apr-July	5298	4440	4229
Ft. Peck Dam(below)(5)	3173	65	Apr-Sept	5798	5223	4878
	2749	64	Apr-July	5353	4658	4267

⁽¹⁾ Observed flow plus change in storage in Lima Reservoir

⁽²⁾ Observed flow plus change in storage in Hebgen Lake

⁽³⁾ Observed flow plus change in storage in Hebgen and Ennis Lakes

⁽⁴⁾ Observed flow plus change in storage in Canyon Ferry

⁽⁵⁾ Observed flow plus change in storage in Canyon Ferry and Ft. Peck Reservoirs

^(*) Preliminary data furnished by U. S. Geological Survey, subject to correction



	Seaso		m-Flow in T	housands	of Acre I	
UPPER MISSOURI RIVER	FORECAST	%	FORE-		10-Yr.	
IN MONTANA	RUNOFF	10-Yr	CAST		d Runoff*	Avg.
		AVG.	PERIOD	1953	1952	1943-52
SUN RIVER						1 -10
Vaughn (near) (6)	293	64	Apr-Sept	790	312	458
	250	58	Apr-July	745	284	431
MARIAS RIVER					1-6	
Shelby (near)	413	65	Apr-Sept	934	476	635
	380	65	Apr-July	871	435	582
Brinkman (near)	417	65	Apr-Sept	1025	534	641
	384	65	Apr-July	963	491	587
JUDITH RIVER						
Utica (near)	36.3	79	Apr-Sept	38	47	46
	33.3	79	Apr-July	36	45	42
MUSSELSHELL RIVER						
Harlowton (at)	68	69	Apr-Sept	74	118	99
` ′	63	69	Apr-July	66	109	91
Mosby (at)	118	66	Apr-Sept	124	172	178
	111	66	Apr-July	119	166	168
YELLOWSTONE RIVER						
Corwin Springs (at)	1481	74	Apr-Sept	1649	2171	2012
oor with obtained (do) -	1236	74	Apr-July	1366	1867	1669
Livingston (near)	1468	63	Apr-Sept	1820	2417	2315
mvingsoon (near)	1212	64	Apr-July	1496	2062	1908
Billings (at)	2497	56	Apr-Sept	3367	4642	4403
billings (ac)	2144	57	Apr-July	2854	4046	3758
SHIELDS RIVER	2144	21	Apr -5 ary	2074	доцо	3170
	07.6	61.	Amm Camb	61	ا در	1.0
Wilsall (near)	27.6	60	Apr-Sept	58	50 48	45
Ol-wie Danie (a+)	25.9		Apr-July		162	43
Clyde Park (at)	53.0	43	Apr-Sept	130		122
OLADIC BODIC DATED	49.0	44	Apr-July	122	154	113
CLARK FORK RIVER	2) 2	۳۱		۲, ۵		(00
Chance (at)	340	54	Apr-Sept	519	576	629
	305	55 55 56	Apr-July	469	517	557
Edgar (at)	367	55	Apr-Sept	528	613	665
	324	56	Apr-July	467	538	581
WIND RIVER						
Riverton (at) (8)	370	65	Apr-Sept	285	368	571
BIG HORN RIVER						
Boysen Res. below (9)	700	65	Apr-Sept	611	884	1079
SHOSHONE RIVER						
Buffalo Bill Dam(be)(12) 530	66	Apr-Sept	582	695	802

⁽⁶⁾ Observed flow plus change in storage in Gibson, Willow Crk and Pishkin Res.

(8) Observed flow plus storage in Bull Lake and Pilot Butte Reservoirs

(9) Observed flow plus storage in Boysen Reservoir

⁽¹²⁾ Observed flow plus storage in Buffalo Bill Reservoir

^(*) Preliminary data furnished by U. S. Geological Survey subject to revision



	Season	nal Strea	m-Flow in T	housands	of Acre 1	reet
UPPER COLUMBIA RIVER	FORECAST	%	FORE-			10-Yr.
IN MONTANA	RUNOFF	10-Yr.	CAST		Runoff*	Avg.
		Avg.	PERIOD	1953	1952	1943-52
					,	
CLARK FORK RIVER						
Bonner (above) (14)	694	81	Apr-Sept	808	833	853
	611	81	Apr-July	718	749	751
	525	82	Apr-June	619	673	644
Missoula (above)	1248	68	Apr-Sept	1887	1782	1841
	1116	68	Apr-July	1695	1619	1644
	971	.68	Apr-June	1435	1468	1417
Missoula (below)	2050	60	Apr-Sept	3185	3268	3392
	1869	61	Apr-July	2879	3011	3080
	1637	62	Apr-June	2370	2722	2652
St. Regis (at)	2779	61	Apr-Sept	4071	4338	4524
	2521	61	Apr-July	3701	3972	4110
	2180	64	Apr-June	3054	3572	3399
Plains (near) (15)	8598	71	Apr-Sept	11880	11550	12117
	7718	70	Apr-July	10950	10740	11096
	6424	68	Apr-June	9062	9641	9502
Cabinet Gorge (at)(15)	9691	71	Apr-Sept	13002	12554	13557
	8806	71	Apr-July	11767	11613	12388
	7473	71	Apr-June	9720	10336	10584
BLACKFOOT RIVER						
Bonner (near)	544	56	Apr-Sept	1078	949	988
, , ,	479	56	Apr-July	977	869	893
	430	56	Apr-June	816	795	773
BITTERROOT RIVER						
Darby (near)	_262	44	Apr-Sept	557	603	593
	243	44	Apr-July	533	567	551
	213	44	Apr-June	430	517	484
At Mouth (16)	636	42	Apr-Sept	1271	1486	1524
	594	41	Apr-July	1184	1392	1437
	524	42	Apr-June	935	1254	1235
FLATHEAD RIVER (N.Fork)						
Columbia Falls (near)	1626	88	Apr-Sept	2049	1745	1850
· · · ·	1484	88	Apr-July	1875	1605	1682
	1275	89	Apr-June	1540	1415	1434
Columbia Falls(at)(17) 4847	79	Apr-Sept	6523	5733	6111
. , , ,	4518	80	Apr-July	6075	5362	5665
	3960	81	Apr-June	5043	4804	4880
Polson (near) (15)	5610	78	Apr-Sept	7565	7029	7193
, , , , , , , , ,	5025	74	Apr-July	7081	6615	6770
-	4013	69	Apr-June	5880	5930	5798

⁽¹⁴⁾ Difference in observed flow, Clark Fork above Missoula & Blackfoot at Bonner

⁽¹⁵⁾ Observed flow plus change in storage in Flathead Lake & Hungry Horse Res.

⁽¹⁶⁾ Difference in observed flow, Clark Fork above and below Missoula

⁽¹⁷⁾ Observed flow plus change in storage in Hungry Horse Reservoir (*) Preliminary data furnished by U. S. Geological Survey, subject to correction



MONTANA STREAM-FLOW FORECASTS MARCH 1, 1955

	Т									
	Seaso	Seasonal Stream-Flow in Thousands of Acre Feet								
UPPER COLUMBIA RIVER	FORECAST	%	FORE-			10-Yr.				
IN MONTANA	RUNOFF	10-Yr.	CAST	Measured	Runoff*	Avg.				
3		Avg.	PERIOD	1953	1952	1943-52				
						-/42 /-				
MIDDLEFORK FLATHEAD										
RIVER										
West Glacier (near)	1362	75	Apr-Sept	2067	1682	1817				
Week G_G_G_G_	1264	75	Apr-July	1926	1575	1686				
	1084	75	Apr-June	1581	1408	1/1/12				
SOUTH FORK FLATHEAD			White ourse		1400					
RIVER										
Columbia Falls (near)	1500	70	Amm Comb	0077	0067	0067				
(17)		70	Apr-Sept	2277	2067	2267				
(11) _	1510	70	Apr-July	2172	1980	2147				
	1345	70	Apr-June	1846	1824	1879				
SWAN RIVER										
Big Fork (near)	_568	88	Apr-Sept	604	619	644				
<u> </u>	505	89	Apr-July	534	556	570				
	421	90	Apr-June	416	481	466				

(17) Observed flow plus change in storage in Hungry Horse Reservoir (*) Preliminary data furnished by U. S. Geological Survey, subject to correction



COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

Summary of snow survey data by tributary Watersheds March 1, 1955

	No. of	No.	Snow t	vater ed	quivalent	1 955
	Courses Averaged	Years	expres		per cent	
MTCCOIDT DT				1 ->>>		
MISSOURI RI	VER DADIN	TH MON	LANA			
JEFFERSON RIVER						
Rock-Beaverhead Horse Prairie Big Hole Wise River Ruby River Total Jefferson	4 6 7 3 <u>1</u> 21	7 7 7-21 7-20 10 7-21	80 66 64 69 100 68	57 47 51 65 58 56	63 52 61 71 90 60	
MADISON RIVER	14	14-21	72	84	77	
GALLATIN RIVER	5	13-21	91	78	86	
MISSOURI MAIN STEM	10	17-21	74	76	79	
Teton River Sun River Marias River Milk River Musselshell River Total Missouri above Ft.Pec	3 7 1 1 1 k 53	7 6-21 21 14 17 6-21	40 49 46 1 09 43 62	45 81 74 120 61 74	51 65 73 100 43 72	
UPPER YELLOWSTONE (MONTANA)	8	9 -3 5	65	69	76	
Shields River	1	17	96	63	89	
LOWER YELLOWSTONE (WYOMING) Shoshone River Wind River Popo Agie River Owl Creek Greybull River Tongue River Shell Creek Norwood Creek Clear Creek (Powder River) Crazy Woman Cr. (Powder River)	2 14 6 2 2 3 1 2 1 2	6-11 5-18 6-18 6-6 3-6 4-5 1-5 1-2 4 2-2	23 154 73 15 8	24 160 61 10 8		
COLUMBIA RI	VER BASIN	IN MON	TANA			
KOOTENAI RIVER ABOVE LIBBY, MON FLATHEAD RIVER UPPER CLARK FORK B L ACK FOOT RIVER BITTERROOT RIVER Total Columbia to Idaho lin	15 14 3 <u>3</u>	6-18 4-21 4-21 4-21 14-21 4-21	48 61 69 65 83 63	72 79 66 66 74	67 70 77 79 43 78	



	Date	1955 Snow	Water		Pa	st Record	YRecor
Elev.	of Survey	Depth (In.)	Content (In.)	1954	1953	Average	ecord
						'	
4 6930 2 6950 1 8850 3 6800	3/2 3/2 2/10 2/10 2/27	27 32 8 16 33	5.7 7.2 1.0 2.8 5.6	7.9 10.2 0.0 2.7 8.7	9.9 11.2 1.8 5.8 11.5	9.0 11.2 1.4 4.8 9.3	7 7 7 7 19
9 8100 1 7400 2 6650 2 7090	2/11 ₄ 2/11 2/11 2/11 2/11 2/12	22 29 23 14 22 21	4.8 6.9 4.4 2.0 4.1 3.9	8.8 11.8 4.7 3.6 4.8 6.0	12.0 15.4 6.1 5.6 6.4 8.4	10.6 13.4 7.7 4.4 6.7 7.2	7 7 7 7 7
4 6900 5 6700 2 7100 8 7340 6 7300 7 6720	2/15 2/15 2/15 2/28 2/14 2/13 2/13 3/1	32 31 20 56 22 25 19 49	10.1 8.2 4.2 14.2 4.3 6.5 3.4 11.3	14.1 12.3 6.2 21.4 8.8 10.2 6.9 15.6	14.6 12.9 7.3 24.4 11.4 12.3 6.9 19.0	15.7 13.4 7.4 19.4 10.1 10.7 7.3 14.7	7 7 7 21 7 7 10 17
5 8450 3 6300	2/17 3/2 2/17 3/1	21 40 16	4.5 7.6 2.8 3.7	7.6 9.0 5.1 3.7	8.4 9.0 5.7 6.4	7.8 7.9 5.2 4.1	7 20 7
	3 7400 64 6930 62 6950 61 8850 63 6800 1 6700 1 7400 2 6650 2 7090 1 6800 1 6900 1 6900 1 6900 1 6700 1 7340 1 6720 1 672	of Survey 3/2 3/400 3/2 3/2 6930 3/2 2/10 3/2 6950 2/10 3/3 6800 2/27 1 6700 0 7600 2/14 0 2/11 1 7400 2/11 1 6800 2/12 1 6800 2/12 1 6700 2/15 2/15 6700 2/15 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/15 6700 2/17 6720 67300 2/13 676720 2/17	Date of Depth (In.) Elev. Survey (In.) 3/2 27 3/4 6930 3/2 32 3/2 6950 2/10 8 3/3 6800 2/27 33 1 6700 20 7600 2/14 22 20 8100 2/14 29 21 7400 2/11 23 22 6650 2/11 14 22 7090 2/11 22 21 6800 2/12 21 23 7440 2/15 32 24 6900 2/15 31 25 6700 2/15 30 27 100 2/28 56 27 340 2/14 22 28 56 27 340 2/14 22 28 56 27 390 2/15 31 27 6720 2/13 19 36 6200 3/1 49 47 7000 2/17 21 58 8450 3/2 40 58 3600 2/17 16	Date of Depth Content (In.) Elev. Survey (In.) Survey (In.) Date of Depth Content (In.) D	Date of Survey (In.) (In.) Water Content (In.) 1954 Elev. Survey (In.) (In.) 1954 Elev. Water Content (In.) 1954 Elev. Elev. Elev. Elev. Elev. Elev. 1954 Elev. Elev. 1954	Date of Depth Content (In.) Pa Water Content (In.) Pa	Date of Survey Content Content



MISSOURI BASIN		1955	SNOW CO		ASUREM ast Re		Y R		
DRAINAGE BASIN			Date	Snow	Water			ent (In.)	Record
AND SNOW COURSE	No.	Elev.	of Survey	Depth (In.)	Content (In.)	1954	1953	Average .	St
MADISON RIVER									
Hebgen W. Yellowstone 21-Mile *Big Springs *Island Park *Valley View Norris Basin	11E5 11E7 11E6 11E9 11E10 11E8 10E2	6550 6700 7150 6500 3600 6500 7500	3/3 3/1 2/28 2/26 2/27 2/26 2/28	34 37 50 62 60 43 32	8.2 7.3 11.1 16.1 12.4 8.3 7.2	10.1 10.4 16.4 20.8 15.5 12.4 9.8	10.0 14.7 18.9	14.3 18.6 14.7	21 21 21 19 19 10 14
GALLATIN RIVER									
Devil's Slide Hood Meadow Mystic Lake New World 21-Mile	10D4 10D3 10D2 10D1 11E6	8100 6600 6600 6700 7150	2/26 2/26 3/5 3/5 2/28	48 26 27 35 50	12.5 6.3 6.2 8.0 11.1	13.7 5.6 6.8 16.4	15.6 6.4 5.8 7.8 14.7	15.3 6.6 6.3 8.5 14.3	20 20 20 13 21
MISSOURI RIVER MA	IN STE	M							
Chessman Res. Crystal Lake Grasshopper Kings Hill Picnic Grounds Pipestone Pass Stemple Pass Tenmile, Lower Tenmile, Middle Tenmile, Upper (Teton River)	1205 901 1002 1001 1306 12D1 1201 1202 1203 1204	6200 6100 7000 7950 6500 7200 6900 6250 6800 8000	2/28 2/26 3/1 2/28 3/1 2/28 2/27 3/2 3/3 3/3	14 39 16 35 10 16 27 30 37 42	2.7 9.5 1.8 8.8 2.2 3.2 5.5 7.4 9.7	3.4 9.4 11.9 4.2 4.4 12.1 6.4 8.8 10.9	4.2 8.8 3.1 9.7 6.0 4.9 8.9 6.4 9.5 12.1	4.3 10.2 4.3 10.5 4.4 4.2 8.4 5.8 8.3 10.7	19 11 ₄ 17 21 10 17 21 20 21 20
Fright Creek Waldron Creek West Fork	12A1 12B2 12B1	6000 5600 6000	2/25 2/2l ₄ 2/2l ₄	34 18 35	7.1 3.6 9.8	21.2 9.5 20.0	19.7 7.2 18.8	17.0 7.5 16.2	7 7 7
(Sun River) Benchmark Cabin Creek 5-Bull Gates Park Goat Mountain Wrong Ridge Wrong Creek	12B8 12B6 12B9 12B5 12B7 12B3 12B4	5500 5400 5600 5300 7000 6800 5700	2/26 2/28 2/26 3/1 2/28 3/3 3/3	28 22 22 29 32 54 44	6.5 4.1 4.9 5.4 7.2 14.6 11.2	15.0 9.1 12.6 14.7 16.3 22.2 20.4	7.0 6.1 5.1 8.1 9.5 18.5	9.8 7.1 7.8 10.9 9.0 22.1 16.0	7 6 7 6 21 6



MISSOURI BASIN DRAINAGE BASIN AND			Date of	1955 Snow Depth	SNOW CO Water Content	Pa	ast Re		Y R e e a c r o s r
SNOW COURSE	No.	Elev.	Survey	(In.)	(In.)	1954	1953	Average	d
MISSOURI RIVER MA	IN STE	M (Cont	'd)						
(Marias River) Marias Pass	13A5	5250	3/2	49	11.2	24.3	15.2	15.4	21
(Milk River) Rocky Boy	9 A l	5200	3/1	22	4.7	4.3	3.9	4.7	14
(Musselshell) Grasshopper	1002	7000	3/1	16	1.9	4.4	3.1	4.3	17
UPPER YELLOWSTONE									
Canyon Cooke City Crevice Mt. Lake Camp Lupine *Lewis Lake Div. *Astor Creek *Tom Thumb Summit	10E3 10D7 10D5 10E4 10E1 10E9 10E8 10E7	7750 7400 8400 7850 7300 7000 7700 7900	2/28 3/1 3/1 3/1 2/28 3/2 3/2 3/2	47 21 28 32 38 97 82 61	10.2 4.3 5.2 5.2 9.3 26.9 20.1 13.0	15.1 9.8 7.4 9.5 10.4 41.3 31.0 22.5	13.9 8.5 7.9 8.8 8.7 39.8 30.7	13.8 7.0 8.2 9.1 8.6 35.4 25.3 22.0	9 18 16 18 16 35 35 7
(Shields River) Porcupine	1003	6500	3/2	2 9	4.9	5.1	7.8	5.4	17

^{*}Adjacent Basin



					SNOW CO	VER ME	ASUREM	ENTS	Y R e e
MISSOURI BASIN			D - t -	1955	77. J		ast Re		a c
DRAINAGE BASIN AND			Date of	Snow	Water Content	wate	r Cont	ent (In.)	r o s r d
SNOW COURSE	No.	Elev.	Survey	-) (In.)	1954	1953	Average	α
LOWER YELLOWSTON above Dive									
Brooks Lake #3 Burroughs Creek Du Noir Geyser Creek Little Warm Sheridan T-Cross Ranch *Togwotee Pass	10F8 9F4 9F6 9F7 9F8 9F5 9F3 10F9	9200 8800 8750 8500 9500 7500 8000 9600	2/22 2/2l ₄ 2/23 2/23 2/23 2/22 2/2l ₄ 3/1	49 23 18 16 32 19 15	14.9 7.3 3.3 3.4 7.3 3.5 2.9 19.4	22.0 13.2 7.2 6.9 14.9 7.6 7.2 26.3	22.4 15.2 7.4 7.2 14.8 8.2 7.5 24.4	20.8 15.2 9.0 8.4 17.8 6.7 6.5 27.5	18 6 14 6 6 18 14 5
Dinwoodie Dry Creek Hobbs Park Mosquito Park St. Lawrence Trout Creek *Kendall *Loomis Park *Black Rock *Yellow Jacket	9F10 9F9 9G3 9G4 9F11 9G2 9F12 10F16 10F7	10000 9500 10000 9500 9000 8400 7900 8500 8600 6775	2/21 2/21 2/27 2/27 2/28 2/27	20 11 39 25 19 20	5.0 2.0 11.3 5.4 3.7 4.5	9.5 4.5 17.0 7.7 5.5 6.6 16.8 19.3 6.5	11.8 6.9 13.9 7.0 6.0 6.8 12.8 16.9 18.1 5.4	12.7 6.8 18.4 7.4 6.2 5.7 10.3 15.5 13.1 5.9	6 6 11 11 6 13 13 8 15
POPO AGIE RIVER Blue Ridge Grannier Meadows *Larsen Creek Sawmill Glade South Pass Mulligan Park *Dutch Joe	8G2 8G4 9G6 8G1 8G3 9G1 9G5	9500 9000 9000 8500 9000 8900 8700	3/5 2/27 3/1 3/5 2/27	48 19 27 47	12.5 3.6 7.2 11.8	13.0 13.5 4.2 7.2 14.6 7.0 5.6	10.2 11.1 4.0 6.5 12.3 9.8 6.4	10.1 11.6 10.6 6.3 11.8 9.7 7.1	15 18 6 15 15 13



					CNOT GO	יייי איייייייייייייייייייייייייייייייי	· CIII)	TNIMO	77. D
MISSOURI BASIN				1955	SNOW CO	Pa	ast Re	cord	Y R e e a c
DRAINAGE BASIN AND			Date of	Snow	Water Content	Water	Cont	ent (In.)	a c r o s r
SNOW COURSE	No.	Elev.	Survey) (In.)	1954	1953	Average	d d
BIG HORN RIVER -	WYOMIN	<u>IG</u>							
Beavers Mill Owl Creek	9F2 8F1	8900 8700	3/2 3/2	26 10	5.6 2.6	9.4 5.8	7.5 2.3		6
Timber Creek	9E2	8800	-,			3.1	4.5	4.6	6
Wood River	9El	8000				5.4	3.6	3.9	3
SHOSHONE RIVER									
East Entrance Sylvan Pass	10E6 10E5	7000 7 1 00	3/1 3/1	38 40	7.0 7.0	10.8	10.9		6 11
TONGUE RIVER									
Burgess Jct. Big Goose	7E1 7E2	7900 7700				16.2 3.8	11.8	12.4	4
Dome Lake	7 E 3	9000				8.8	6.6	3.7 6.2	4 4 5
POWDER RIVER			•						
North Powder Soldier Park	7 E 9 7 E 5	8500 8700	3/2	29	6.5	5.4 1.9	6.0 3.3	5.7 3.2	2 4
Muddy Pass	7 E 8	9700						6.8	2



COLUMBIA BASIN DRAINAGE BASIN			Date	1955 Snow	SNOW CO	Pa	ast Re		
AND SNOW COURSE	No.	Elev.	of Survey	-	Content (In.)	1954	1953	Average	s r d
KOOTENAI RIVER (above I Monta								
Brush Creek Fernie New Fernie Kimberley Marble Canyon Nelson Creek Red Mt. Sinclair Pass Sullivan Mine Upper Elk Riv Gray Creek	lliAli Can Can Can Can Can Can Can Can	5000 3500 4100 3800 5000 3050 6000 4500 5100 4400 5100	2/27 3/1 3/1 2/28 2/28 2/28 3/1 2/28 2/28 2/28 2/27	36 39 50 25 36 48 47 18 33 28 50	8.4 7.2 11.6 4.9 8.2 9.6 10.8 4.1 7.5 5.7 13.2	18.8 15.2 21.3 12.2 16.5 21.3 25.4 8.9 17.4 12.9 23.6	13.8 7.7 14.7 17.4 17.6 4.4 13.2	8.1 15.8 7.0 14.9 14.0 16.4 5.9 13.6 8.9	8 15 4 14 8 15 18 8 9 7
FLATHEAD RIVER									
Basin Creek Big Creek Brush Creek Cattle Queen Coyote Hill Desert Mountain Goat Mountain Hell Roaring Div Holbrook Kishenehn Logan Creek Marias Pass N. Frk Jocko Quintonkon Spotted Bear Mt. Strawberry Lake Trinkus Lake Trout Lake Twin Creeks Upper Holland	13B13 14A2 14A5 13A5 13B7 13A13	5000 6750 5000 4700 4200 5600 7000 5700 4530 4300 4300 5250 6330 3800 7000 6500 6500 3600 3580 7000	3/5 3/2 2/27 3/3 3/1 3/2 2/28 3/1 2/28 3/2 3/1 2/27 3/2 3/2 3/2 3/2	27 88 36 79 31 43 32 64 38 24 31 49 51 39 51 35 79	6.2 28.5 8.4 21.5 7.2 10.7 7.2 18.8 9.8 4.0 6.1 11.2 30.3 13.6 9.7 31.5 28 12.1 8.5 23.8	13.1 37.5 18.8 38.4 13.2 16.6 16.3 31.4 12.3 11.5 10.6 24.3 42.2 15.6 15.9 33.2 42.6 18.5 14.8 36.9	5.9 35.8 10.8 29.5 11.4 12.3 9.5 26.2 7.6 6.4 15.2 37.0 10.8 11.1	35.5 13.5 30.9 10.4 13.2 9.0 29.8 9.9 8.5 8.7 15.4	4 14 8 10 8 11 21 5 4 9 8 21 14 7 4 5 7 4 5



COLUMBIA BASIN DRAINAGE BASIN AND			Date	SNOW CO		VER ME F Wat	Year ord		
SNOW COURSE	No.	Elev.	of Survey	Depth (In.)	Content (In.)	1954	1953	Average	d
UPPER CLARK FOR	_	1	- /-						
Coyote Hill Chessman Res Fish Lake, Ida. Intergaard Lubrecht Forest North Frk Jocko Picnic Grounds Pipestone Pass Southern Cross Stemple Pass Storm Lake #2 Stuart Mill Tenmile, Lower Tenmile, Middle Tenmile, Upper *49 Meadows *Lookout	13C4 #613C8 13B7 12C6 12D1 13C5 12C1 13C7 13C6 12C2	4200 6200 5000 6450 5400 6330 6500 6500 6500 6500 6500 6500 6250 6800 5000 5250	3/1 2/28 3/2 3/1 3/1 3/1 2/28 3/1 2/27 2/26 3/1 3/3 3/3 3/3	31 14 102 19 18 96 10 16 21 27 33 20 30 37 42 97 96	7.2 2.7 33.1 4.2 2.9 30.3 2.2 3.2 4.6 5.5 7.7 3.8 5.0 7.4 9.7 23.6 22.8	13.2 3.4 39.8 6.7 5.3 42.2 4.4 6.0 12.1 10.5 5.5 6.4 8.8 10.9 44.2 45.8	11.4 4.2 35.7 7.6 3.0 47.0 6.0 4.9 5.6 8.9 12.8 6.4 9.5 12.1	10.4 4.3 37.6 6.1 4.4 36.4 4.2 4.7 8.4 11.6 5.1 5.8 8.3 10.7 30.9 30.3	8 19 3 19 4 14 10 17 19 21 2 19 20 21 20 15 30
Gibbons Pass Nezperce Pass Nezperce Camp *Moose Creek	13D2 11p1 11p2 13D16	7100 6575 5580 6200	2/28 3/4 3/4 3/1	56 54 49 49	14.2 13.4 11.9 11.3	21.4 14.4 11.6 15.6	24.4 19.0	19.4 14.7 10.7 14.7	21 15 14 17



STATUS OF RESERVOIR STORAGE MARCH 1, 1955

BASIN		USEABLE	тно	USAND AC	IN STORAGE				
&		CAPACITY					10-yr.avg.		
STREAM	RESERVOIR	(M.A.F.)	1955	1954	1953	1952	1943-52		
MISSOURI RIVER BASIN									
Beaverhead Madison Riv Madison Riv Hyalite Crk Missouri Riv Missouri Riv Missouri Riv Missouri Riv N.Fk.Sun Riv N.Fk.Sun Riv N.Fk.Sun Riv Birch Crk Dupuyer & Birch Judith Riv Missouri Riv Missouri Riv Milk Riv W.Rosebud Crk Red Lodge Crk Tongue Riv SwiftcurrentCrk	Hauser & Helena Lk Helena Holter Lk Gibson Willow Crk Pishkun Swift Lk Francis Ackley Lk	84.00 345.00 41.00 8.03 2043.00 62.50 10.45 81.92 105.00 32.30 32.00 30.00 112.00 5.82 9,000.00 127.20 66.80 20.80 27.50 73.90 66.10	172.9 38.0 1,224.0 59.6 9.4 74.7 66.7 24.0 19.3 27.0 95.3 9,344 74.5 49.0 5.3 18.2	17.9 170.2 35.7 4.2 413.6 56.2 8.3 59.1 75.5 27.0 20.5 24.8 92.3 2.4 12,180 86.1 38.1 6.1 18.9 8.1	41.6 191.6 29.2 5.0 40.1 23.9 58.4 21.4 17.5 13.6 97.9 12,750 85.9 29.7 4.6 21.9 18.0 18.9	35.6 225.2 38.7 38.0 3.0 37.5 66.9 25.5 23.0 25.3 94.1 3.7 12,390 147.7 37.0 4.6 24.3 39.1 19.6	282.3 35.0 39.5 1/8.4 52.6 55.3 15.4 18.9 25.4 97.3 4.6 11.996 83.5 30.2 6.2		
MISSOURI RIVER	BASIN - WYOMING								
Shoshone Riv Wind Riv Wind Riv Bull Creek Belle Fourche	Buffalo Bill Boysen Pilot Butte Bull Lk Key Hole		139.7 315.4 14.7 63.1 4.8	153.2 361.9 12.0 76.8 8.7	151.2 540.8 12.4 60.8 8.3	237.0 122.0 9.3 66.7 0	283.7 122.0 13.7 61.9		
MISSOURI RIVER BASIN - NORTH DAKOTA									
Hart River Hart River	Hart Butte Dickerson	54.80 4.3	50.6 2.5	56.2 5.7			3/ 59.1 <u>L</u> / 6.0		
MISSOURI RIVER BASIN - SOUTH DAKOTA									
Belle Fourche Cheyenne River Cheyenne River Grand River Missouri Riv. 1/7-yr average 3/3-yr average 4/4-yr average	Angostura Deerfield Shadehill Ft. Randall	185.00 160.00 15.1 84.00 1583.00	85.2 33.5 10.5 75.9	109.1 31.0 15.4 82.3	39.0 13.5	88.5 44.0 14.9 0	115.8 44.0 13.4 		



STATUS OF RESERVOIR STORAGE MARCH 1, 1955

BASIN	USEABLE	THOUSAND ACRE FEET IN STORAGE						
& STREAM	RESERVOIR	CAPACITY (M.A.F.)		1954	1953	1952	10-yr.avg. 1943-52	
			of the section of the section of	and the streethingship				
COLUMBIA RIVER BASIN								
Flint Crk S.Fk.Flathead	Georgetown Lk	31.00	22.2	20.4	23.8	20.9		
Flathead Riv		3,500.00 1,791.00	2,489 788.8	1,947 616.1	679.5 641.0	572.3	5/897.3 600.2	
Flathead Flathead	Camas Res's Mission Valley	42.80 98.60	38.9 55.7	23.4 20.6	35.8 36.2	40.9		
Jocko Crk	Lwr Jocko Lk	7.6				0.4	1/ 40•/	

^{5/ 3-}yr average

^{6/} Camas Reservoirs are shown as a sum of (4) small reservoirs on the west side of Flathead Lake located on Dry Creek and Little Bitterroot River.

^{7/} Mission Valley Reservoirs are shown as a sum of (8) small reservoirs located south and east of Flathead Lake. Both Camas and Mission Valley reservoirs are operated by the Indian Irrigation Service.





Federal - State - Private COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"